ABSTRACT OF THE DISCLOSURE

A system and method corrects luminance non-uniformity caused by images being obliquely projected onto a screen. A camera is used to record the geometry of the obliquely displayed image. Utilizing this recorded geometry, a homography is then derived that maps pixels between the projector's coordinate system and the screen's coordinate system. Utilizing the homography, the projector pixel that subtends to the largest projected area on the screen is identified. Next, the ratio of each pixel's projected area to the largest projected area is computed. These ratios are then organized into an attenuation array that is used to produce "corrected" luminance information from input image data. The projector is then driven with the "corrected" luminance information.